seen; the patch is an inch long and about a quarter of an inch in average width; it has not the stellate cells of the rush. The material has been protected in a depression in one of the artificial facets of the implement, and in a second position somewhat nearer the butt, there is further trace of the same material. My opinion is that these grass stems (or whatever stems they may be) were possibly wrapped round the basal end of the implement as a protection for the hand against the asperities of the flint. The asperities are very noticeable in the instrument referred to, as it has a sharp cutting edge at the butt, with none of the original bark of the flint left for convenience of holding. The vegetable material is undoubtedly as old as the implement, and the unabraded condition of the stone may account for its position in the facets. WORTHINGTON G. SMITH

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Awned Carpels of Erodium

SIR JOHN LUBBOCK's address to the British Association, and Mr. Francis Darwin's paper in the Linnean *Transactions*, on the hygrometric awns of the achenes of *Erodium* and other plants, fail to give the honour to the right man. Their references reach some thirteen years back; but if they will look further they will find the late discoveries (including those of Hildebrand and Zimmerman in *Pringsheim's Jahrbücher*) forestalled as to *Erodium* by nearly half a century. In the *Magazine of Natural History* for 1836 is a modest contribution of nearly two pages from Robert Mallet of Capell Street, Dublin, describing and figuring his observations on the achenial awns of *Erodium moschatum* and *Pelargonium peltatum*. He finds that the awns of *Erodium* possess "most wonderful hygrometric sensibility." The five awns lie in grooves of the carpophore. He gives transverse views of the awns in various conditions of torsion, and of the carpophore (not as well executed as the similar ones of F. Darwin and Hildebrand). He states that aridity causes the awns to twist, and so to extricate themselves from their grooves, and at the same time downy filaments bristle forth from the awns, and the achenes detach themselves and fall to the ground. Here the awns still continue to twist and keep tumbling over, so as to recede from the parent plant. At last by twisting they become like balloons wafted about by every zephyr. But motive power has not ceased with the awn: the slighest hygrometric change produces motion either backwards or forwards in it; and the constant tendency of this motion is to *screw the seed into the ground* (Mr. Mallet's italics). Such is the shape and great sensibility of the awns, that they may be readily applied to form most delicate hygrometers, for which purpose he had used them. Nearly all of these observations have been rediscovered and confirmed and published in elaborate form by the eminent investigators of our own day.

Princeton College, November 18 G. MACLOSKIE

The Song of the Lizard

WHILST quartered in St. Helena, at Ladder Hill, I was frequently disturbed by the "*tweet-tweet*" of a small lizard in the verandah and Melia trees which overshadowed it, which sounds for a long time I thought were produced by birds. It is, according to Melliss' description, the "*Hemidactylus frenatus* (Schleg.).—A small brown harmless lizard about four inches in length, which lives under stones and old timber in the warm lower parts of the island. It seldom enters houses unless in pursuit of flies or scorpions, but is plentiful about the neighbourhood of Jamestown, where in the evening its loud chirp is frequently heard." This may corroborate Mr. Pascoe's remarks in his letter to NATURE (vol. xxv. p. 32). S. P. OLIVER

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A Double Egg

I HAVE received a very remarkable egg, or rather, I should say, a double egg, laid by a hen belonging to Mr. Isaac Sharman, of Ranmoor, Sheffield. The egg weighed 4¾ oz., and measured round its greatest circumference 8 inches, and its least 7 inches. In measuring the egg the shell was broken, and inside the outer shell there was no yoke but simply white of egg surrounding another perfect egg of the average size. This inner egg has the shell quite complete and hard. Mr. Sharman describes the bird as a cuckoo hen. E. HOWARTH

Sheffield Public Museum, December 12

SIR ANTONIO BRADY

IT is always with a keen feeling of regret that we record the loss from the scientific ranks of men whose faces, as well as their names, were familiar to us by long association, and who were for years fellow-workers in the same geological area. Such a one was Sir Antonio Brady, F.G.S., who passed from among us on the 12th inst. from an affection of the heart.

He was the eldest son of the late Mr. Anthony Brady, of the Royal William Victualling Yard, Plymouth, by his marriage with Marianne, daughter of Mr. Francis Perigal. Born in 1811 he entered the Civil Service of the Navy as a junior clerk in the Victualling Yard, Deptford, more than fifty years since. After serving in various offices, having been promoted to head-quarters, he became head of the Contract Office and Registrar of Public Securities in 1854, subsequently assisting to reorganise that office. After the reorganisation of the office he was appointed first superintendent of the Purchase and Contract Department, retiring from the service in 1870, when he received the honour of knighthood. Since his retirement from the public service, Sir Antonio has devoted his energies to the service of the public, and having taken a leading part in the preservation of Epping Forest for the people was appointed a judge in the "Verderer's Court for the Forest of Epping." He also took great interest in the work of church extension, and was a member of the Ray, the Palæontographical and Geological Societies; he was also in the Commission of the Peace for Westminster. The deceased married, in 1837, Maria, eldest daughter of the late Mr. George Kelner, of Ipswich, by whom he leaves a son, the Rev. Nicholas Brady, M.A., and two daughters.

But it is in his character of a geologist that we must now speak of Sir Antonio Brady. So long ago as 1844 his attention was attracted to the wonderful deposits of brickearth which occupy the Valley of the Roding at Ilford, within a mile of his residence. Encouraged by Prof. Owen and other eminent palæontologists, he commenced to collect the rich series of mammalian remains which the Thames Valley brickearths yield. Owing, however, to their porous nature, the bones had lost, during their long interment, all their gelatine, and the earlier "finds," when exhumed, were so soft and friable that they crumbled beneath the touch, and it was not until fresh gelatine had been introduced that it was found possible to preserve these magnificent remains of the old inhabitants of this district. In his Catalogue of the Pleistocene Mammalia from Ilford, Essex (1874, 4to, printed for private circulation only) Sir Antonio Brady pays a just tribute of respect to the genius and ability of his first instructor in the art of preserving fossil bones, and acknowledges that he was indebted to Mr. William Davies, F.G.S., of the British Museum, for the preservation of most of the larger specimens in his collection.

Some idea may be formed of the enormous riches of this deposit when we find that an amateur, in his leisure hours, was able to amass nearly one thousand specimens of Mammalia from a single locality, comprising: *Felis spelæa*, *Canis vulpes*, *Ursus*, sp., *Elephas primigenius*, *E. antiquus*, *Rhinoceros leptorhinus*, *R. megarhinus*, *R. tichorhinus*, *Equus fossilis*, *Megaceros Hibernicus*, *Cervus elaphus*; *C.* sp.; *Bison priscus*; *Bos giganteus*, *Hippopotamus*, sp. To this interesting series of fossil remains of the old fauna of the Thames Valley, we may add that the subsequent researches of Prof. Boyd Dawkins, F.R.S., and R. W. Cheadle, Esq., F.G.S., have added the "Musk-ox," *Ovibos Moschatus*, and the labours of F. C. J. Spurrell, Esq., F.G.S., the "Lemming." We have thus presented to us in this area the conjunction of the Northern and Southern forms of land-animals as marvellous as that which modern London exhibits to-day, in its assemblage of specimens of the genus Homo, from

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every clime. For with the *Hippopotamus*, the *Rhinoceros*, and the Lion from the south, we have also in abundance the *Cyrena fluminalis*, a shell now characteristic of the Valley of the Nile and the rivers of India and China: whilst from the north advance to meet them the "Musk-Ox," the Reindeer, and the Lemming; we have also evidence at Walthamstow of the Elk (*Alces malchis*).

To Sir Antonio Brady, then, we are indebted for a most valuable collection of Pleistocene mammalia, now happily preserved in the British Museum of Natural History, Cromwell Road. Nor must we omit to mention that he strove by his presence, as a resident at Stratford, and by his constant acts of kindness and hospitality to the workmen, and by the *largesse* which he freely gave, to rescue from destruction these interesting relics of a pre-historic age, which now help to swell the magnificent series of our National Museum.

HENRY WOODWARD

BRIGHTON HEALTH CONGRESS

THE Brighton Health Congress, which was opened on Tuesday, December 13, and which has been accompanied by an Exhibition of Domestic, Sanitary, and Scientific Appliances, has been one of the most successful of its kind, and by far the most successful of any of a purely local character. In origin and in progress it has, throughout, been Brightonian, and although many of the scholars who communicated addresses and papers were outsiders, they came by invitation. To the Congress in the course of the week no less number than 1200 added their names as Associates, while the Exhibition was at all times well filled, some 400 persons per day, independently of the Associates, paying for admission. It is estimated, indeed, that altogether between four and five thousand persons have been present. We stated last week that the Exhibition was presided over by Lord Chichester, and the Congress by Dr. Richardson; and we gave a detail of the sections and order of proceedings: we shall dwell more particularly on the addresses and papers which were submitted.

The President's Opening Address

Dr. Richardson took for his theme "The Seed-Time of Health." In the opening passages he drew a picture of life and death in the time when the ancient Greeks were in the meridian of their intellectual existence. In the midst of the night, when the sun cannot see the deeds of men, certain of these were depicted carrying a dead child, in all its beauty, to the pyre. They carried it in this solemn silence and darkness because of the shame they felt that anything so young and beautiful should die in what ought to be the seed-time of health. Upon this he drew a sharp and striking contrast from our own time. He pointed out the great mortality of our children, for which we have grief, fond memories, but no shame. We accept the events, in short, as if they were natural, and erect memorials of them. After illustrating these points, the causes of the great mortality of the young were classified under four heads—the inherited, the accidental, the inflicted, and the acquired. Under the first head the influence of hereditary diseases were discussed; under the second head the diseases of an epidemic character, and which occur from exposure to one or other of the communicable poisons, were considered; under the third head the injuries arising from bad nursing, excessive competition in education, and improper feeding, were brought under notice; and under the fourth head the evils incident to early resort to smoking, the use of stimulants, late hours, and irregular meals, were made subjects of comment. What now is wanted, said the President, was the ideal of a new nobility. In the wild-boar days of human existence; in days when men, hardly emancipated from lower forms of life, crept out of their caves, their huts, their walled prisons, to see their nobler species go forth to exercise those rude arts of hunting, fighting, revelling, which formed the whole art of civilisation, there was a nobility which deserved the name—the representative of necessity. But now, when these arts have degenerated into mere childish imitations, mere apedoms of the great past, they are but injurious pretensions for nobility of soul and body. Once noble, according to the spirit of their day they are in this day ignoble. The address concluded with two applications of thought, one general, the other local. The general requested those who rule and govern us to look at the seed-time of health as it is, and take it as the test of good or bad government. The local was addressed to the people of Brighton, that the meeting then commencing might be truly useful, and the date from whence they should move onwards until the shame of mortal events, which the sun should never witness, be felt whenever they occur.

Section A.—Health of Towns

The president, Mr. Edwin Chadwick, C.B., opened the Section on Wednesday with an address on the prevention of epidemics. He set out by describing the various means adopted to stay the great outbreak of cholera in 1848, in which he took a prominent part, and the deductions made from observations then taken. The conclusions that had been come to then were that to aggregate disease in large hospitals was only to increase the danger, and that the very best means of preventing the spread of infection was by the adoption of sanitary measures at the places where, in the cycle of epidemics, they were to be expected. He described in a very interesting manner the precautions taken at York, at Merthyr Tydvil, at Mevagissy in Cornwall, and other places, and the gradual decrease of deaths that followed, and he showed that similar precautions taken at St. Petersburg, Malta, and Memphis, had had the same result. At St. Petersburg, for example, the deaths had decreased from 25,000 to 3000 in the successive decade. Some other equally startling statistics were given by Mr. Chadwick. By the returns of the Local Government Board, he calculated that we had saved in the death-rate from disease or infection a quarter of a million of lives, and three million cases of sickness, and putting this at a money value, 5*l.* for death and 1*l.* for a sickness, over four millions of money had been saved. In conclusion he portrayed with poetical picturesqueness a possible future "when medical science shall occupy itself rather with the prevention of maladies than their cure, when governments shall be induced to consider the preservation of a nation's health as important as the promotion of its commerce or the maintenance of its conquests, and when we may hope to see approach a time in which, after a life spent almost without sickness, we shall close the term of an unharassed existence by a peaceful Euthanasia."

The papers which followed the delivery of Mr. Chadwick's address were all of them good, and some of them of unusual excellence. Mr. Easton's account of the water supply of Brighton was exceedingly interesting and able. It led to a sharp and animated debate on the water softening process in large towns. Mr. Easton and the Mayor, while advocating the principle of softening water, seemed inclined rather to look upon it as a household than a municipal duty. They were opposed by several other speakers. Mr. Griffiths followed with a paper on the escape of foul gases from ventilating gratings on the main sewers of towns. The gist of his argument was that the faults were rather in the houses than in the sewers. If, he maintained, the sewer system of houses was so perfect that nothing could be retained in the sewer pipes, and if the houses were thoroughly cut off from the sewer, the risks of escape of gas were greatly reduced. What was wanted in the sewer was a current of air, not ventilation at one point. The defective house drainage

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